

## A new species of *Henckelia* (Gesneriaceae) from North-Eastern Thailand

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### ABSTRACT

The new species *Henckelia moniliformis* (Gesneriaceae) is described from North-Eastern Thailand. A key to the species of *Henckelia* in Thailand is provided, along with illustrations, notes on the ecology and the IUCN conservation status of the new species.

KEYWORDS: *Henckelia amplexifolia*, *H. nakianensis*, Lamiales, revision, taxonomy

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### INTRODUCTION

An ongoing field survey conducted by the limestone project research team from the Forest Herbarium (BKF), Bangkok, led by Dr Naiyana Tesana, recorded an unknown plant population growing in association with *Microchirita tubulosa* (Craib) A. Weber & D.J. Middleton within a small, localized patch. The plants are acaulescent herbs with opposite leaves, in each leaf pair one leaf is large and the other much reduced, and they bear cymose inflorescences, campanulate corolla tubes, two fertile stamens, chiritoid stigmas and orthocarpic capsules. Although a chiritoid stigma is also present in the genera *Microchirita* (C.B. Clarke) Yin Z. Wang and *Primulina* Hance, members of *Microchirita* differ in possessing a cristate or bracteate inflorescence, whereas *Primulina* is characterized by a scapose inflorescence (Weber *et al.*, 2011; Puglisi & Middleton, 2017; Janeesha & Nampy, 2020). These characters place the plant within the genus *Henckelia*, which comprises species that may be acaulescent or caulescent species, with equal or unequal leaf pairs, and bearing either orthocarpic and plagiocarpic capsules. The newly collected material most closely resembles

*Henckelia amplexifolia* Sirim and *H. nakianensis* Sirim., J. Parn. & Hodk., but differs from both in the characters outlined below and is therefore described here as a species new to science.

The genus *Henckelia* comprises approximately 85 species (Borah *et al.*, 2024; Sahani *et al.*, 2024; Kishwan *et al.*, 2025; Kishwan *et al.*, 2026; Chowlu *et al.*, 2026; GRC, 2026—continuously updated). It is distributed in India, Sri Lanka, Nepal, Bhutan, Bangladesh, China, Myanmar, Thailand, Laos and Northern Vietnam. After the recent publication of several new species for Thailand (Sirimongkol *et al.*, 2019) and this new taxon, nine species are now known for Thailand.

### MATERIALS AND METHODS

The description of the new species is based on the study of herbarium specimens. For dry specimens, flowers were softened in water or 70% alcohol before measurements were taken. The conservation assessment was made following the IUCN criteria (IUCN, 2024).

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KEY TO THE SPECIES OF *HENCKELIA* FROM THAILAND

1. Mature plant developing one large leaf only **H. nakianensis**
1. Mature plant developing two or more leaves
  2. Plant with one large leaf, other leaf or leaves reduced
    3. Acaulescent herb with one large leaf and one small leaf; stolons present **H. amplexifolia**
    3. Caulescent herb with one large leaf, one underdeveloped leaf, and one pair of small leaves; stolons absent **H. moniliformis** Sirim. sp.nov.
  2. Plant with two or more large leaves
    4. Acaulescent herb
      5. Calyx hairy with dense brown hairs; anthers bearded **H. speciosa**
      5. Calyx glabrous or with sparse hairs; anthers not bearded **H. grandifolia**
    4. Caulescent herb
      6. Corolla < 1 cm long **H. amplexifolia**
      6. Corolla > 1.5 cm long
        7. Leaves mostly crowded near base; petioles 7.3–22.5(–30.6) cm long **H. grandifolia**
        7. Leaves spaced along stem; petioles 0.5–8 cm long
          8. Calyx lobes free almost to base **H. dasycalyx**
          8. Calyx lobes fused into a tube at base
            9. Leaf lamina margin entire or only weakly crenate; stems glabrous **H. rotundata**
            9. Leaf lamina margin serrate, dentate or crenate; stems glabrous to densely hairy
              10. Calyx hairs similar to pedicel hairs **H. anachoreta**
              10. Calyx hairs differing from pedicel hairs, pedicel almost glabrous **H. pumila**

## NEW SPECIES

***Henckelia moniliformis* Sirim. sp. nov.**

This new species is allied to *Henckelia amplexifolia* and *H. nakianensis* in having a campanulate corolla tube which is less than 1 cm long, but differs in having one caducous bract (two persistent bracts in *H. amplexifolia* and *H. nakianensis*), two flowers per inflorescence (vs mostly more than two flowers per inflorescence), calyx persistent (vs calyx caducous), two lobes of upper lip hooded (vs two lobes of upper lip straight), anthers with dense moniliform hairs only on the lower half (vs anthers glabrous), staminodes apparently lacking (vs present) and orthocarpic fruit (vs plagiocarpic fruit). It also differs from *H. amplexifolia* in having a caulescent habit (acaulescent in *H. amplexifolia*) and lacking stolons (present in *H. amplexifolia*) and differs from *H. nakianensis* in having more than one leaf (only one leaf in *H. nakianensis*) and the curved filaments (filaments straight in *H. nakianensis*) (Table 1).—Type: Thailand, Loei, Na Duang District, Na Dok Kham Subdistrict, Wat Tham Pha Dam Santitham, 17°33'12.7"N, 101°54'25"E, alt. 427 m, fl. & fr., 13 Nov. 2024, *Naiyana Tetsana, Orathai Kerdkaew, Chandee Hemrat & Sarun Jirakorn* 2974 (holotype **BKF!**[SN268031]; isotypes **BKF!**[SN268032] (also **BKF!** spirit collection), **E!**, **K!**, **QBG!**, **SING!**). Figs. 1–2.

Annual herb, caulescent, up to 17 cm tall; stems with pilose hairs. *Leaves* opposite, only two pairs of leaves developing; lower pair anisophyllous, only one leaf fully developed, sessile, lamina symmetrically ovate, 4.4–6.6 by 3.6–5.9 cm, apex acute or obtuse, base shallowly cordate, margin serrate, upper and lower lamina surface covered with multicellular eglandular hairs, midrib slightly widened at base, secondary veins 8–13 pairs; underdeveloped leaf petiolate, petiole 3–8 mm long, glabrous, lamina elliptic or spatulate, 5–9 by 2–3 mm, apex acute or obtuse, base cuneate, margin serrate, sparsely hairy, secondary veins about 2 pairs; upper leaf pair fully developed, sessile, lamina symmetrically ovate, 1.2–3.1 by 1–2.1 cm, apex acute, base obtuse, margin serrate, upper and lower lamina surface covered with multicellular eglandular hairs, secondary veins about 3 pairs. *Inflorescences* axillary or lateral, cymose, up to 8 inflorescences on each plant with the underdeveloped leaf with only 1 axillary inflorescence, cymes 2-flowered; peduncle up to about 2 cm long; bract 1, free, inserted between leaf pair, sessile, elliptic, about 3.1 mm long, hairy, caducous; pedicels terete, 0.8–2.2 cm long, with eglandular hairs. *Calyx* consisting of a tube for about half of length and free lobes, tube 1–3 mm long, lobes triangular or narrowly triangular, 0.6–0.8 by 0.7–0.8 mm wide, hairy, persistent. *Corolla* white, tube campanulate, 4–5 mm long, about 3 mm wide,

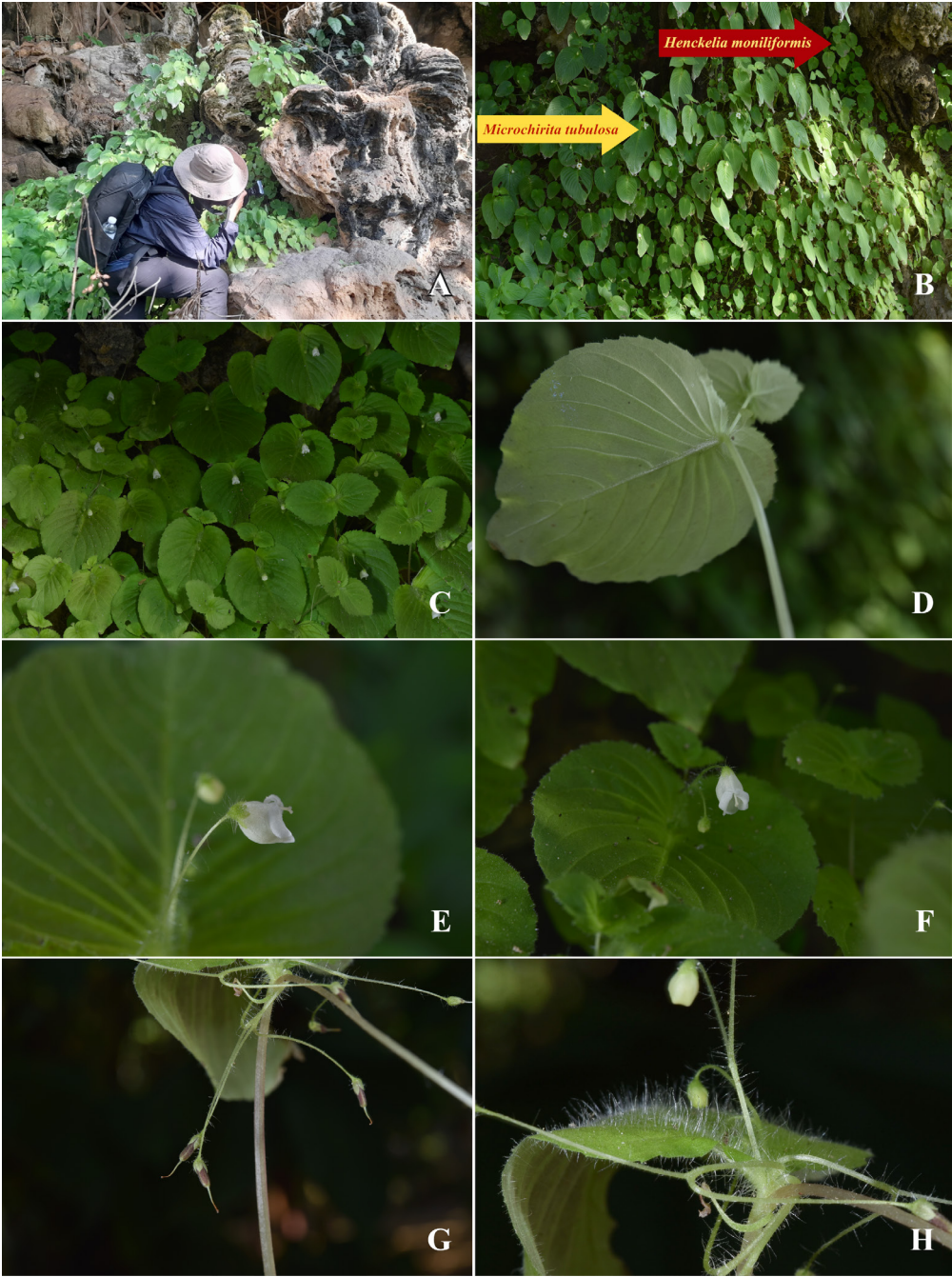


Figure 1. *Henckelia moniliformis* Sirim.: A.–C. habitat; D. lower leaves; E. flower, side view; F. flower, front view; G. fruit; H. eglandular hairs. Photos by Naiyana Tetsana.

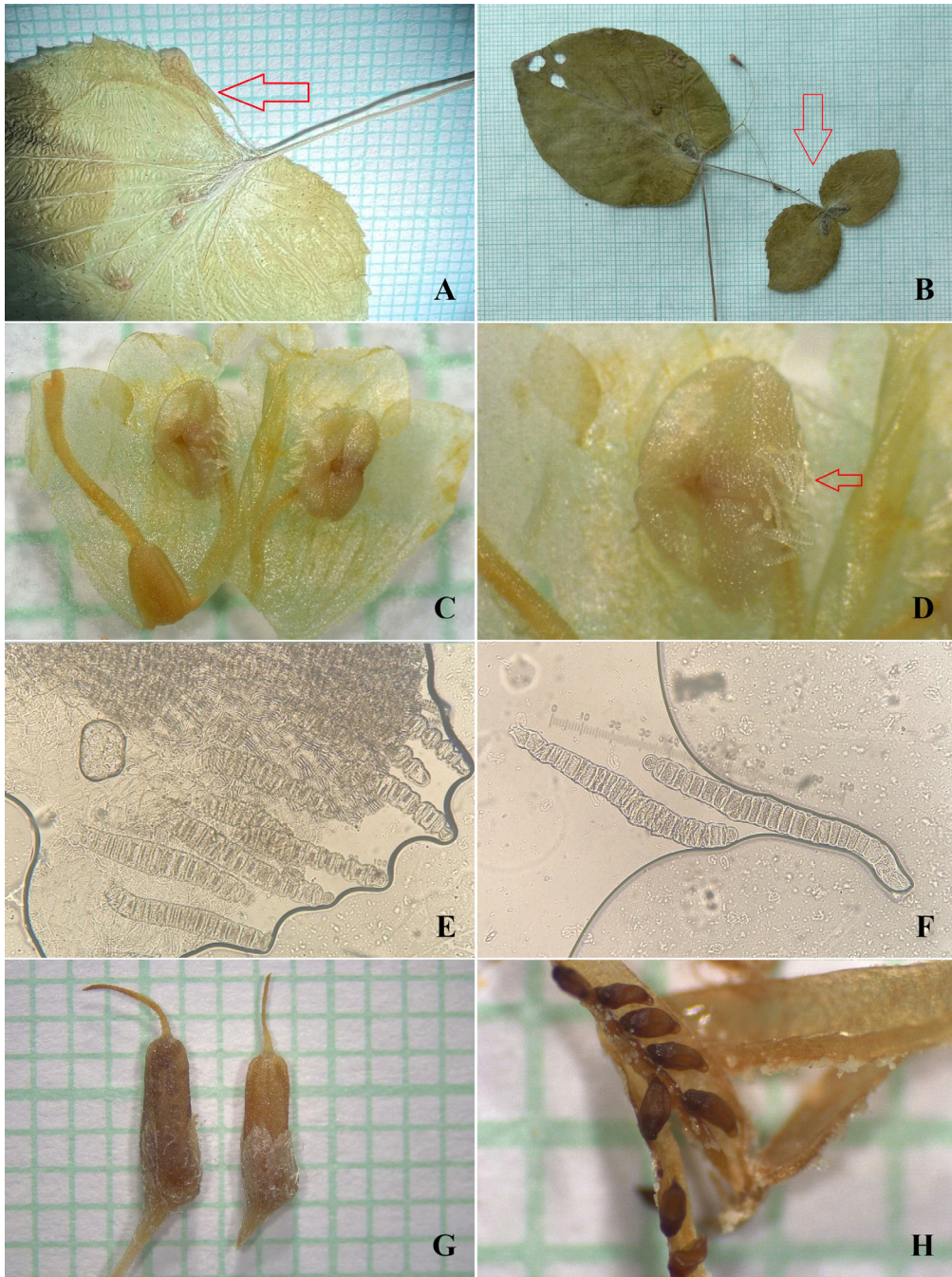


Figure 2. *Henckelia moniliformis* Sirim.: A. shows undeveloped leaf; B. shows pair of small leaves; C. flower dissection; D. shows moniliform hairs; E. & F. 100X moniliform hairs; G. fruits; H. seeds. A.–H. photos by Sukontip Sirimongkol.

glabrous, slightly pouched; corolla lobes about 1.5 by 1 mm; two upper corolla lobes conspicuously curved or hooded, three lower corolla lobes straight. *Stamens* 2; filaments inserted at about 0.5 mm from the base of the corolla tube, about 1 mm long, curved; anthers reniform, coherent, yellow, about 1.2 mm across with dense moniliform hairs on the lower half, dehiscence longitudinal; staminodes apparently lacking. *Gynoecium* about 5 mm long, ovary 0.7–1 by about 0.5 mm; style terete, slender; stigma bilobed. *Fruit* orthocarpic, a tubular capsule, stramineous, transparent, 4–5 by 1–1.4 mm, with glandular hairs. *Seeds* elliptic or oblong, 30–40 seeds per capsule, castaneous, about 0.2 by 0.5 mm, glabrous.

Distribution.— Only known from the type locality.

Ecology.— On limestone, at c. 450 m alt., flowering & fruiting in November.

Vernacular name.— Sawet naduang (เสวตนาด้าง)(Purposed here), dao soi khai muk (ดอฮ้อยไข่มุก)(General, purposed here).

Etymology.— The name of this species refers to the moniliform hairs on the anthers.

Provisional conservation assessment.— EN B1ab(iii,v), B2ab(iii,v). This species is only known from the type collection which is not from a protected site. In the dry season, the plants may be disturbed by pilgrims to the temple where the plant was collected. Although there is only one collection made and the EOO and AOO are unknown, the possibilities for suitable habitat in the region is limited and the likely EOO and AOO certainly well within the limits to assess as endangered. Exploration of other limestone sites in the region has hitherto not led to the discovery of additional populations although there remain many underexplored sites with the possibility that there are additional populations to be found.

Table 1. Morphological character differences between *Henckelia moniliformis*, *H. amplexifolia* and *H. nakianensis*.

| Characters          | <i>H. moniliformis</i>                   | <i>H. amplexifolia</i>                 | <i>H. nakianensis</i>                  |
|---------------------|------------------------------------------|----------------------------------------|----------------------------------------|
| Stolon              | absent                                   | present                                | absent                                 |
| Stem                | caulescent                               | acaulescent                            | caulescent                             |
| Number of leaves    | more than 1 leaf                         | more than 1 leaf                       | only 1 leaf                            |
| Leaf shape          | cordate, ovate                           | cordate, orbicular                     | cordate, orbicular                     |
| Bract               | caducous (1 bract)                       | persistent (2 bracts, free)            | persistent (2 bracts, free)            |
| Inflorescence       | 2-flowered cyme                          | 2–9-flowered cyme                      | 2–10-flowered cyme                     |
| Hairs on pedicel    | eglandular hairs                         | glandular hairs                        | glandular hairs                        |
| Calyx               | persistent                               | caducous                               | caducous                               |
| Calyx tip           | not reflexed                             | reflexed                               | not reflexed                           |
| Corolla tube        | pouched campanulate                      | wide campanulate                       | campanulate                            |
| upper corolla lobes | hooded                                   | straight                               | straight                               |
| Filament attachment | 0.5 mm from the base of the corolla tube | 2 mm from the base of the corolla tube | 3 mm from the base of the corolla tube |
| Filament length     | 1 mm, curved                             | 1.5 mm, curved                         | 1.5 mm, straight                       |
| Anther trichomes    | present                                  | absent                                 | absent                                 |
| Staminodes          | absent                                   | present (3)                            | present (2)                            |
| Fruit               | orthocarpic                              | plagiocarpic                           | plagiocarpic                           |

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